MC-L403
SAFETY DATA SHEET

1. Company and Product Identification

1.1	Identification ï Product Name:	**MC-L403**
1.2	Other means of identification Synonym:	Mixture, none
1.3	Recommended Use Of The Chemical and Restrictions On Use:	Reverse osmosis membrane cleaner Use only as directed on the label.
1.4	Name, Address, And Telephone Number Of The Manufacturer, Or Other Responsible Party:	**Anderson Chemical Company** 325 South Davis Avenue Litchfield, MN 55355 (320) 693-2477
1.5	24 Hour Emergency No.:	1-800-424-9300 (United States)

DRINKING WATER TREATMENT ADDITIVES CLASSIFIED BY NSF INTERNATIONAL TO ANSI/NSF 60 AS STANDARD DRINKING WATER TREATMENT CHEMICAL FOR USE OFF-LINE IN REVERSE OSMOSIS SYSTEMS

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a clear, colorless to amber liquid. Depending on the duration of contact, over-exposures can moderately to severely irritate the skin or eyes, or cause burns. This product is neither reactive nor flammable. Thermal decomposition of this product produces irritating vapors and toxic gases (e.g. carbon monoxide, carbon dioxide, phosphorous oxides, and sodium oxide). Emergency responders must wear personal protective equipment (and have appropriate fire-extinguishing protection) suitable for the situation to which they are responding.

Physical Hazards Summary	None
Potential Health Hazards Summary	Acute Oral Toxicity, category 4 Skin irritation, category 2B Eye irritation category 2 A STOT repeated exposure category 2
Potential Ecological Effects Summary	The components of this product will decompose into other organic and inorganic compounds over time under normal environmental conditions

2.1 Classification of Product

U.S. OSHA classification	Acute Oral Toxicity, category 4 Skin irritation, category 2B Eye irritation category 2 A STOT repeated exposure category 2
Classification as per EC 1272/2008 (CLP/GHS)	Acute Oral Toxicity, category 4 Skin irritation, category 2B Eye irritation category 2 A STOT repeated exposure category 2

WHMIS classification

Acute Oral Toxicity, category 4
Skin irritation, category 2B
Eye irritation category 2 A
STOT repeated exposure category 2

Hazardous Materials Information System (HMIS) Rating

Health	**2**
Flammability	**0**
Physical Hazard	**0**
Protective Equipment	**C**

2.2 Label Elements OSHA/GHS

General Warnings

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use
P403	Store in a well-ventilated place.
P233	Keep container tightly closed

Signal Word: WARNING!

Hazard statements

H319	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
H 312	Harmful in contact with skin
H332	Harmful if inhaled
H314	Causes severe skin burns and eye damage

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305	IF IN EYES: rinse extensively with large amounts of water
P351	Rinse cautiously with water for several minutes.
P338	Remove contact lenses, if present and easy to do. Continue rinsing.
P310	IF INGESTED or INHALED Immediately call a POISON CENTER or doctor/physician.

Hazard pictograms

2.3 Unclassified Hazards: None

2.4 Ingredients with unknown acute toxicity: None

3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical name **CAS #** **EINECS #**	**% w/w**	**US OSHA**	**GHS/EU CLP**	**WHMIS**
Inorganic phosphorous compound Proprietary Proprietary	25-35	Acute Oral Toxicity, category 4 Skin irritation, category 2B Eye irritation category 2 B STOT repeated exposure category 2 Xn Harmful;	Acute Oral Toxicity, category 4 Skin irritation, category 2B Eye irritation category 2 B STOT repeated exposure category 2 Xn Harmful;	Acute Oral Toxicity, category 4 Skin irritation, category 2B Eye irritation category 2 B STOT repeated exposure category 2 Xn Harmful;

Chelate Proprietary Proprietary	25-35	Eye Irritant, Category 2A	Eye Irritant, Category 2A	Eye Irritant, Category 2A
Organic acid Proprietary Proprietary	10-20	Irritant, Category 2	Irritant, Category 2	Irritant, Category 2
Product	100	Acute Oral Toxicity, category 4 Skin irritation, category 2B Eye irritation category 2 A STOT repeated exposure category 2		

NE = Not Established. C = Ceiling Limit. See Section 16 for Definitions of Terms Used.

4. FIRST-AID MEASURES

4.1 Description of Necessary Measures

Skin exposure: If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim should seek immediate medical attention if any adverse exposure symptoms develop.

Eye exposure: If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Victim must seek medical attention.

Inhalation: If mist of this product are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. Have victim rinse mouth with water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention.

4.2 Most Important Symptoms/Effects: Immediate: Inhalation exposure may cause coughing or sneezing. Symptoms of skin and eye contact may include redness and irritation. Ingestion may cause stomach pains, cramps, and gastritis.

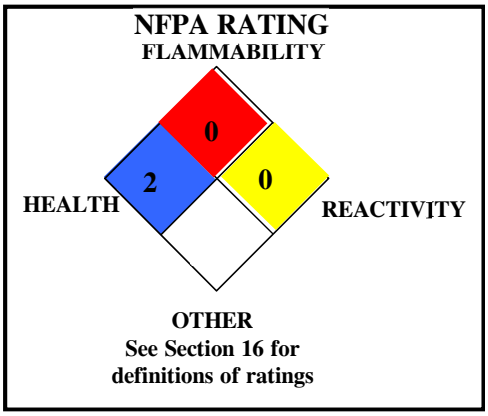
Delayed: Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin). Symptoms may include tingling, redness, and visible injury.

4.3 Indication Of Immediate Medical Attention And Special Treatment Needed, If Necessary: **TARGET ORGANS:** Acute: Skin, eyes, respiratory system. Chronic: Skin, eyes, respiratory system

Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Rescuers should be taken for medical attention if necessary. Take a copy of label and SDS to physician or health professional with victim.

5. FIRE-FIGHTING MEASURES

Flammable properties — Non-flammable aqueous solution



Auto ignition Temperature °C: Not applicable.

Flammable Limits (in air by volume, %):
Upper: Not applicable.
Lower: Not applicable.

5.1 Suitable And Unsuitable Extinguishing Media:

This material will not contribute to the intensity of a fire. Use extinguishing material suitable to the surrounding fire.

Water spray	YES	Carbon dioxide	YES
Foam	YES	Dry chemical	YES
Halon	YES	Other	YES

5.2 Specific Hazards Arising From Chemical:

When involved in a fire, this material may decompose and produce irritating fumes and toxic gases (e.g., carbon monoxide, carbon dioxide, phosphorous oxides, and nitrogen oxides).

Explosion Sensitivity to Mechanical Impact: Not applicable.
Explosion Sensitivity to Static Discharge: Not applicable.

5.3 Special Protective Equipment And Precautions For Fire-Fighters:

Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people.

Protective equipment

For small releases (< 20 L), clean up spilled liquid wearing gloves, goggles, faceshield, and suitable body protection. The minimum Personal Protective Equipment recommended for response to non-incidental releases (more than 20 L) should be Level C: triple-gloves (neoprene gloves and nitrile gloves over latex gloves), chemical resistant suit and boots, hard hat, and full-face respirator with acid mist and HEPA filter.

Emergency procedures

Monitoring must indicate that exposure levels are below those provided in Section 8 (Exposure Controls-Personal Protection) and that oxygen levels are above 19.5% before anyone is permitted in the area without Self-Contained Breathing Apparatus.

6.2 Methods and Materials for Containment and Cleaning Up

Vacuum or soak- up solids liquid for recovery/disposal. Neutralize residue with sodium bicarbonate or other neutralizing agent for dilute acids. Decontaminate the area thoroughly. Test area with litmus paper to ensure neutralization. Place all spill residues in a suitable plastic container. Dispose

of in accordance with applicable U.S. Federal, State, or local procedures, or appropriate local standards (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

7.1 Precautions for Safe Handling

All employees who handle this material should be trained to handle it safely. Open containers carefully on a stable surface. Empty containers may contain residual liquid; therefore, empty containers should be handled with care.

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Avoid generating dust of this product. Remove contaminated clothing immediately.

During equipment maintenance follow practices indicated in Section 6 (Accidental Release Measures) to decontaminate equipment or clean-up small spills. Make certain that application equipment is locked and tagged-out safely if necessary. Collect all rinsates and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate local standards.

7.2 Conditions For Safe Storage

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials. Material should be stored in secondary containers, or in a diked area, as appropriate. Storage and use areas should be covered with impervious materials. Keep container tightly closed when not in use. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

Incompatibilities: Strong bases, oxidizers, and water reactive materials.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

8.1 Control Parameters

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL			OTHER
			TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	IDLH mg/m^3	mg/m^3
Inorganic phosphorous compound	Proprietary	25 - 35	1	3	1	3	1000	NIOSH REL: TWA = 1 STEL= 3
Chelate	Proprietary	25 - 35	NE	NE	NE	NE	NE	NE
Organic acid	Proprietary	10 - 20	NE	NE	NE	NE	NE	NE
Water and other components which are present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers and mutagens).		Balance	None of the other components contribute significant additional hazards at the concentration present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards and Canadian Workplace Hazardous Materials Identification System Standards (CPR 4).					

8.2 Appropriate Engineering Controls.

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this Section or as low as reasonably practical. Ensure eyewash/safety shower stations are available near areas where this product is used.

8.3 Personal Protective Equipment

Respiratory protection: None needed under normal conditions of use. Use NIOSH approved respirators if ventilation is inadequate to control mists or vapor. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the applicable local standards. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-face piece pressure/demand SCBA or a full-face piece, supplied air respirator with auxiliary self-contained air supply is required under OSHAôs Respiratory Protection Standard (1910.134-1998).

Eye protection: Use approved safety goggles or safety glasses, as described in OSHA 29 CFR 1910.133. Splash goggles with a faceshield may be needed if splash hazards exist.

Hand protection: Wear chemical impervious gloves (e.g., Solvex Ê , Neoprene).

Body protection: If needed, use body protection appropriate for task (e.g., Tyvek Ê suit, rubber apron) to protect from splashes and sprays.

9. PHYSICAL and CHEMICAL PROPERTIES

Appearance	This product is a clear, colorless to amber liquid.		
Odor	Light disinfectant odor	Odor Threshold	NE
Freezing Point ºC	< 0	pH (2% solution)	2.5-3.5
Initial Boiling Point ºC	> 100	Boiling Point Range ºC	N/A
Flammability	Non-flammable	Evaporation Rate (water = 1)	Similar to water
Vapor Density (air = 1)	<1	Vapor Pressure mm Hg @ 20ÁC:	18 - 20
Solubility (in water)	Soluble	Relative density (water = 1)	1.3-1.4
Viscosity	Similar to water	Oil-Water Partition Coefficient	N/A
Decomposition Temperature	NE		
How To Detect This Substance (Warning Properties):	Litmus paper will turn red in contact with product.		

10. STABILITY and REACTIVITY

10.1	Reactivity	Not considered reactive.
10.2	Chemical Stability	Stable
10.3	Possibility of hazardous reactions	Hazardous polymerization will not occur.
10.4	Conditions to avoid	Avoid mixing with incompatible materials.
10.5	Incompatible Materials	Strong bases, oxidizers, and water reactive materials
10.6	Hazardous Decomposition Products	Thermal decomposition of this product may generate nitrogen oxides, carbon monoxide, phosphorous oxides, and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Toxicity data for hazardous ingredients	Oral LD_{50} mg/kg	Dermal LD_{50} mg/kg	Inhalation LD_{50} mg/kg
Inorganic phosphorous compound	LD_{50} (oral, rat) = 1759 mg/kg	LD_{50} (dermal, rabbit) = 3149mg/kg	N/A
	Standard Draize Test (Skin-Rabbit, adult) 595 mg/24 hours: Severe irritation effects Standard Draize Test (Eye effects-Rabbit, adult) 119 mg: Severe irritation effects TDLo (Oral-Man) 1286 mL/kg LDLo (Unreported-Man) 220 mg/kg		
Chelate	LD_{50} (Intraperitoneal-Rat) 1548 mg/kg: Behavioral: convulsions or effect on seizure threshold; Lungs, Thorax, or Respiration: cyanosis; Gastrointestinal: changes in structure or function of salivary glands	N/A	N/A
	Standard Draize Test (Skin-Rabbit, adult) 500 mg/24 hours: Moderate irritation effects Standard Draize Test (Eye -Rabbit, adult) 1900 mg Standard Draize Test (Eye-Rabbit, adult) 100 mg/24 hours: Moderate irritation effects		
Organic acid	LD_{50} (Oral-Rat) 3 g/kg LD_{50} (Oral-Mouse) 5040 mg/kg LD_{50} (Intraperitoneal-Rat) 883 mg/kg LD_{50} (Intraperitoneal-Mouse) 903 mg/kg LD_{50} (Subcutaneous-Rat) 5500 mg/kg LD_{50} (Subcutaneous-Mouse) 2700 mg/kg LD_{50} (Intraperitoneal-Mouse LD50: 903 mg/kg LD_{50} (Intravenous-Rabbit, adult) 330 mg/kg LD_{50} (Intravenous-Mouse) 42 mg/kg	LD_{50} (dermal, rabbit) > 2000 mg/kg	N/A

	Transport label(s) required	Not regulated
	Packing Group	Not regulated
	Packaging Instructions	Not regulated

International Maritime Organization

14.9	UN Number	Not regulated
	UN Proper Shipping Name	Not regulated
	Transport Hazard Class(es)	Not regulated
	Transport label(s) required	Not regulated
	Packing Group	Not regulated
	Marine Pollutant	Not regulated
	NA Emergency Response Guide Number (2012)	Not regulated
	Transport in Bulk (Annex II of MARPOL 73/78 and IBC Code)	Not regulated

15. SAFETY, HEALTH and ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT

PROGRAM	Inorganic Phosphorous Compound	Chelate	Organic Acid			
US EPA PROGRAMS						
Clean Air Act Hazardous Air Pollutants	NO	NO	NO			
Safe Drinking Water Act	NO	NO	NO			
RCRA F, K, P, U or D-lists	NO	NO	NO			
Epa Priority Pollutant	NO	NO	NO			
SARA 302 RQ	NO	NO	NO			
SARA 302 TPQ	NO	NO	NO			
SARA 313 LISTED	YES	NO	NO			
SARA CHEMICAL CATEGORIES						
SARA 311/312 ACUTE	NO	NO	NO			
SARA 311/312 CHRONIC	NO	NO	NO			
SARA 311/312 FIRE	NO	NO	NO			
SARA 311/312 PRESSURE	NO	NO	NO			
SARA 311/312 REACTIVITY	NO	NO	NO			
EPA EXTREMELY HAZARDOUS SUBSTANCE	NO	NO	NO			
CALIFORNIA SAFE DRINKING WATER ACT (Proposition 65)						
This product does not contain any chemical listed on the California Safe Drinking Water Act list (Proposition 65)						
US OSHA PROGRAMS						
PEL	NO	NO	NO			
PSM	NO	NO	NO			
CHEMICAL SECURITY PROGRAMS						
DHS CFATS	NO	NO	NO			
CHEMICAL WEAPONS CONVENTION						
	NO	NO	NO			
US DRUG ENFORCEMENT ADMINISTRATION						
DEA Controlled Substances	NO	NO	NO			
CHEMICAL INVENTORY PROGRAMS						

WHMIS	NO	NO	NO			
DSL	YES	YES	YES			
REACH Pre-registered List	YES	YES	YES			
TSCA	YES	YES	YES			
European Inventory of Existing Commercial Chemical Substances (EINECS)	YES	YES	YES			
EU No-Longer Polymers List (NLP)	N/A	N/A	N/A			
EEC Classification Packaging, and Labeling of Dangerous Substances (Annex 1)	Corrosive	NO	NO			
Philippines	YES	YES	YES			
Japan	YES	YES	YES			
Australia	YES	YES	YES			
Korea	YES	YES	YES			
China	YES	YES	YES			
New Zealand Inventory of Chemicals	YES	YES	YES			

16. OTHER INFORMATION

16.1	Original Preparation	July 2, 1999
16.2	Revision History	February 19, 2004, 28 June 2013; GHS update May 24, 2016, Content corrections; 23 Aug 2016, information update, format changes
16.3	Prepared by	lmt